

**Amendments to the claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (original) A method of covalently joining a DNA strand to an RNA strand comprising:
  - a. forming a topoisomerase-DNA intermediate by incubating a DNA cleavage substrate comprising a topoisomerase cleavage site with a topoisomerase specific for that site, wherein the topoisomerase-DNA intermediate has one or more 5' single-stranded tails; and
  - b. adding to the topoisomerase-DNA intermediate an acceptor RNA strand complementary to the 5' single-strand tail under conditions permitting a ligation of the covalently bound DNA strand of the topoisomerase-DNA intermediate to the RNA acceptor strand and dissociation of the topoisomerase, thereby covalently joining the DNA strand to the RNA strand.
- 2-18. (canceled)
19. (original) A DNA-RNA molecule covalently joined by the method of claim 1.
- 20-22. (canceled)
23. (original) A covalently joined DNA-RNA molecule having a labeled 5' end.
24. (canceled)
25. (canceled)
26. (original) A method of tagging a 5' end of an RNA molecule comprising:
  - a. forming a topoisomerase-DNA intermediate by incubating a DNA cleavage substrate comprising a topoisomerase cleavage site with a topoisomerase specific for that site, wherein the topoisomerase-

DNA intermediate has one or more 5' single-stranded tails; and

- b. adding to the topoisomerase-DNA intermediate a 5'-hydroxyl terminated RNA molecule complementary to the 5' single-strand tail under conditions permitting a ligation of the covalently bound DNA strand of the topoisomerase-DNA intermediate to the RNA molecule and dissociation of the topoisomerase, thereby forming a 5' end tagged DNA-RNA ligation product.

27-44. (canceled)

45. (original) A method of obtaining full-length gene sequences comprising:

- a. isolating full-length mRNA;
- b. attaching a DNA tag sequence to the isolated mRNA; and
- c. synthesizing cDNA using the tagged mRNA as a template.

46-78. (canceled)

79. (original) A method of obtaining full-length gene sequences comprising:

- a. isolating full-length mRNA by employing an affinity purification material;
- b. decapping and dephosphorylating the isolated mRNA;
- c. attaching a DNA tag sequence to the decapped, dephosphorylated mRNA, wherein the tag sequence comprises the sequence shown in Figure 11 and is attached by vaccinia DNA topoisomerase;
- d. synthesizing cDNA using the tagged mRNA as a template;
- e. amplifying the synthesized cDNA, wherein the amplification primers comprise an anti-coding sequence of the tag sequence (5') and a gene specific sequence (3'); and
- f. inserting the amplified cDNA into an expression vector.